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AUTHOR	Grede, John F.
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ABSTRACT

Community college preparation of students for the job market shows an increasing acceptance of basic responsibility for post-secondary occupational education, as contrasted to the poorer placement opportunities of senior institutional graduates. Implications for facility requirements can be drawn from examining concepts, which require: (1) cooperative program planning and implementation, so that the community college catalyzes the community's vocational education capacity, (2) occupational education as a full partner in a comprehensive community college program, (3) a wide range of occupational clusters in community college occupational education, (4) a "lattice" structure for upward and sideward mobility according to the student's ability, (5) special training for the disadvantaged, handicapped, and unemployed, (6) provisions for continuing education, (7) flexible instructional modes to accomplish specified behavioral objectives, (8) work experience, (9) continual updating of vocational programs, and (10) guidance, counseling, and placement services. Working diagrams of line-staff organization for community and junior colleges are provided. (AG)

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CONCEPTS AND COMMENTS:

OCCUPATIONAL EDUCATION AND COMMUNITY COLLEGE FACILITIES

December, 1970

John F. Grede

VT018884

Statement of Purpose:

This is hopefully a non-technical expression of some broad basic thoughts and beliefs about occupational education in community colleges and how those thoughts and beliefs, called concepts in this paper, relate to facilities. It is not intended to answer "nitty-gritty" questions like the amount of space required for a dental hygiene operatory or the electric power requirements for an electronics laboratory. Such specifics have been well handled by specialized area consultants or by guides to systematic planning and development for occupational education facilities as produced by the Center for Vocational and Technical Education at Ohio State University, the Community College Planning Center at Stanford University, and Educational Facilities Laboratories.

Rather, this is an attempt to raise some general questions, to suggest alternatives, to propose a general philosophical framework for occupational education and occupational education facilities in the context of the community college and the community college movement.

This work grew out of a felt need by the American Association of Junior Colleges that many new community colleges with new administrators working on clean slates, and even old junior colleges with old administrators writing in occupational education programs over a liberal arts base, might profit from a few prods and pushes, a few new ways of looking at things, or perhaps even an idea or two which they could derive pleasure from having considered and then rejected in favor of a more workable idea a faculty member may have suggested.

My appreciation goes to Kenneth Skaggs, Andrew Korim, Arden Pratt, and Thomas Hooker of the AAJC staff who have read the manuscript in early draft form and have made many constructive suggestions.

The Community College Today

The American community college has a history to be sure, but like American technology to which the community college owes much of its present role, the rate of change has been so great that to go back more than ten years reveals an institution with only a general family resemblance to the "now college" of today. In these ten years the junior status of earlier times has become a full partnership in higher education as measured by numbers alone. The sheer quantitative picture of two million students, comprising one-third of all undergraduate enrollment and probably more than half of all lower division undergraduate enrollment, taught by one hundred thousand faculty in one thousand institutions, speaks for itself. The impressive numbers are largely a product of the decade of the 1960's and have promoted the image of national success. Business, industry, government, and professional associations have also helped build the image by seeing the community college's relevance to their problems of securing trained and educated manpower for tomorrow's jobs. Older components of the higher education structure are giving grudging recognition to the bumptious young educational giant on one hand by complaining about its uncritical self-acceptance and lack of significant research, and on the other hand, seeking to "do something" for the community colleges through community college staff development programs in graduate schools, inter-institutional research councils, consultant services, workshops, and conferences.

Yet with the growing acceptance of the community college in higher education, there remains an apparent need to be different, to be part of but still distinct from traditional higher education. What is evolving is a separate subsystem, if you will, with the concept of mission quite

different from the two-year institution of ten years ago, as well as from the liberal arts colleges, the state colleges, and the universities. Part of that mission derives from the historical junior college movement of William Rainey Harper's day. A much larger part is recent and consists basically of a greatly expanded concept of service to the community beyond the original target of the college-bound student who lives nearby. Service to city people in some forty large urban complexes now supplements the older town, suburbia, and countryside focus. The urban locale has heightened the emphasis on service to disadvantaged, to what the New Deal used to call the "forgotten man"--minority group members, poverty people, unemployed, handicapped. There is another group of students not easily separable from others, not necessarily disadvantaged but in between, not from factory or farms but from both. In this group is the bulk of America's manpower resource, the average or less than average student who favors experience over academics, the applied arts and sciences rather than the theoretical, and specifics before the abstractions. He is the young or older adult for who job entry skills and job mobility are compelling needs to be provided for by a streamlined minimum of school separating him from his work.

Occupational Education in the Community College

The process of preparing young and older adults for job entry and job mobility is coming to be called occupational education in community colleges. It is an "umbrella" term which conveniently encompasses the specific and manual skills of vocational education, as well as the more abstract and mental skills which need to be added to make technical education. It simultaneously covers agricultural, industrial, business, health, personal service, and public service fields. With the recent inclusion of "manpower type" programs targeted toward minority groups, poverty people, unemployed, and handicapped, occupational education bids fair to dominate the community college comprehensive educational program.

The "in-word", comprehensive, which many self-respecting community colleges consider an integral part of their title, would be meaningless without occupational education. Gross national figures currently identify approximately one-third of the nation's two million community college students as committed to an occupational program. While many community colleges would number less than ten percent of their head count in occupational education, and some entire state systems of community colleges would average only a little over twenty percent, some new and balanced institutions would easily claim the occupational education students as half or better of the total, a figure which seems a reasonable national goal in view of the characteristics of community college students and the national manpower needs for skilled technicians in many fields.

Several factors account for the rapid rise of occupational education in community colleges, a development largely a part of the phenomenal

community college growth of the 1960's although characteristic of some junior colleges, particularly in California, from the time of World War I. Of paramount importance is the increasing complexity of business and industrial technology requiring less unskilled and semi-skilled workers and more with educational preparation beyond the high school level. Higher education has become essential to get ready for the vast array of emerging technical jobs in the middle manpower range, encompassing probably half of the job market today as well as that of the forseeable future. The demand for more sophisticated skills has been accompanied by increased specialization. In the engineering field and particularly in the health occupations area, explosion of knowledge has created the need for specialists at many levels working closely together. The growth of this team concept has further encouraged the development of community college occupational education in that the physician, the dentist, and the engineer no longer practice their professions in splendid isolation, but in close concert with a team of trained assistants who can be prepared in the community college. Recognition of middle manpower requirements and team concepts received national support in the immediate post-Sputnik era when Federal funds, beginning with the National Defense Act of 1958, and continuing through the Vocational Education Act of 1963 and the 1968 Amendments sought to bring American technical manpower up to the presumed level of Soviet development.[1]

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[1] American vocational and technical education has received major infusions of Federal funds when the national interest has been threatened. Witness the passage of the Smith-Hughes Act in 1917 as a response to the frightening spectre of German technological development.

The rapid rise of occupational education coincided with the expansion of the community colleges in the 1960's and these two developments mutually reinforced one another. Occupational education grew in the community college enrivonment which defined job training as collegiate and therefore respectable, and which recognized that neither occupational education nor general education for life skills was as desirable alone as in meaningful combination with one another. The occupational education thrust added to the academically oriented junior college movement an atmosphere of realism, of practicality. Occupational education was gradually recognized as different in kind from college preparatory work, requiring programs with more community and less college control and requiring different faculty with different backgrounds and attitudes. It articulates with the job market rather than with senior college and in this context accepts responsibility for getting all into the next phase, the job market. Precisely the opposite is true in regard to junior college transfer students targeted towards selective senior institutions.

This role of community college preparation of students for the job market increasingly stands out in bold relief as over against senior institutions and graduate schools which also prepare students for a job market. The current 750,000 senior institutional graduates will swell to 1,500,000 by the late 1970's and will compete for the approximately eighteen percent of national job openings requiring the baccalaureate degree or a higher one. Conversely, 500,000 community college and post-secondary area vocational school and technical institute graduates have much greater placement opportunities in the fifty percent of the job market looking for skilled technicians with two year or less of college but prepared in areas where national manpower needs are emerging and continuing.

The better focus of community college occupational education on the job market, recognized not only by community college people but by legislators and public administrators as well as the tax-conscious public, increasingly places basic responsibility for post-secondary occupational education with the community college on the often implied and sometimes stated assumption that two years or less of community college occupational education in many specialities produces a more marketable graduate than many baccalaureate degree programs.

This is not meant to be a presumptious claim nor a national bid for an occupational educational empire, but rather a recognition that the American community colleges over the past decade has been faced with and increasingly are accepting a degree of responsibility for post-secondary occupational education far in excess of any other segment of the American educational hierarchy. It is a responsibility which the secondary school system has yet to extend itself to embrace enthusiastically. The post-secondary area vocational schools and technical institutes have dealt with occupational education, but largely in circumscribed areas of engineering and industrial technology and with relatively small numbers of students. The senior colleges and professional schools have specialized in the baccalaureate or graduate degree level of occupational preparation usually classified as professional. The community college, with the broadest vision imaginable, provides the missing links, or possibly, when the need arises, the whole chain of occupational education for young and older adults between professional education at one end and the vocational high school program at the other, and in some cases even to do the job of a vocational high school.

It is in this vast middle ground that the occupational education mission of the community college is centered. This very same broad and deep area of occupational education is the fertile ground currently plowed and seeded by some seven thousand proprietary business schools, institutes, academies, and assorted private agencies which have made available through profitable resident and correspondence courses a kind of occupational education for a desperate and growing market of several million vocational virgin high school graduates and drop-outs, as well as older adults who want more skills or new skills.

The growing acceptances by community colleges of basic responsibility for post-secondary occupational education is attested to by several developments. State master plans for higher education as illustrated by Illinois in 1966 place community college and occupational education in inseparable union. State Boards of Vocational Education see increasingly larger proportions of vocational education funds going to community colleges. New York recently recognized the need for a planned network of occupational programs in community colleges. State systems with parallel developments of post-secondary area vocational schools and community colleges, Ohio and Arkansas for example, find community colleges taking on occupational programs even though a separate system of post-secondary institutions has evolved for occupational education. Some state systems, North Carolina for example, have oriented the whole community college structure primarily along lines of occupational education for the young student and especially for the adult in need of basic education and job entry skills.

Community College Occupational Education Facilities

In view of the recent history and emerging role of the community college, it goes without saying that all community colleges need to plan for occupational education facilities of their own or for access to facilities provided by someone else. One may still take the philosophical position that education is best provided by the image of Mark Hopkins on one end of a log and his student on the other. The community colleges, however, have long since moved in the other direction and have dotted the national landscape with new, well-planned, spacious buildings to house their ever-increasing enrollments. Some of the most attractive and most functional educational school buildings in America are in the community college movement and architects compete to express its spirit and substance. Perhaps facilities are essential to give the high visibility which helps improve the public status of community colleges. Perhaps their long history of sharing second-class high school facilities also contributes to that need. Perhaps the community colleges' emphasis on innovation, which requires educational technology and the facilities in which to house it account for the emphasis upon buildings. The highly functional nature of community college buildings, spare of ornamentation, is essential to symbolize its mission to do the job, but to do it economically. For many the community college will perhaps create a sense of community where none has existed before, and the physical facility is essential to be seen.

Whatever the motives, the physical structure of the American community college is perhaps as important a part of its characteristics as the open door admissions policy. For occupational education it is important that its role in relation to facilities, its impact on facilities, be clearly recognized.

There are perhaps a dozen or so of basic concepts about occupational education in the community college which are accepted in varying degrees by people in the business. Some may call them guidelines, some may call them elements of a philosophy, some perhaps even regard them as articles of faith. They are viewed here simply as thoughts and beliefs about occupational education based on experience.

In the following pages the concepts will appear, comments which hopefully help to illuminate the concept will be added, and finally, relationships between the concept and facilities will be suggested.

Concept One

Although it has basic responsibility for post-secondary occupational education, the community college needs to plan and implement programs cooperatively with other training and educational institutions in a fully articulated system. Cooperative planning and implementation may require that the community college serve as a catalyst in consolidating the occupational education capacity of the community.

Comment

It would be a waste of valuable resources for community colleges to plan and implement occupational programs without careful consideration of how such programs relate to current and proposed occupational education efforts of high schools, area vocational schools, technical institutes, senior institutions, business and industrial training programs, as well as proprietary schools. Effective typing programs, for example, offered in high school evening programs should give pause to the development of a counterpart program in a community college evening schedule. Joint planning of curricula could possibly save a student time in moving smoothly from drafting in high school to mechanical technology in the community college. Close identification and comparison of course objectives in similar courses offered both at the high school and the community college may lead to advanced placement opportunities and time saving for the student. Proximity of a diploma nursing program in a near-by hospital should be a significant factor in determining the need for an associate degree program in nursing in the community college.

In final analysis our community college occupational goals should be total occupational education for all young and older adults offered by a layer of community colleges within the hierarchical educational cake, but bound to the layers above and below in many and various ways so that duplication is minimized, gaps are prevented, and smooth movement of students is not only facilitated but motivated and encouraged.

It appears increasingly clear that community colleges cannot plan and implement occupational education programs within the confines of their own institution nor even horizontally in concert only with other community colleges, but in vertical and horizontal communication with agencies of all types purveying occupational education. State Boards of Vocational Education increasingly emphasize both the warp and the woof of occupational education fabric. Educational leadership in developing articulation has been lacking in some areas. In others the community college has accepted responsibility for the development and functioning of a community system of occupational education.

Implications for Facilities

Before building facilities to house occupational education a full investigation should be made of existing facilities in nearby institutions which may be underused and which may be effectively converted or diverted to use for community college occupational programs. Even more fundamental is the requirement to determine the existence, scope, depth, and success of other occupational education programs before occupational education programs and facilities are planned for the community college.

Concept Two

Occupational education deserves and requires a full partnership with other components of the comprehensive community college educational program. Tokenism or second class citizenship is as unacceptable for occupational education in community colleges as it is in civil rights.

Comment

The American junior college movement has pretty well adopted the concept of comprehensiveness, which commonly has been achieved by adding occupational education courses and programs to a traditional liberal arts-oriented university parallel program. In older institutions, this has been a long and difficult struggle, only partially successful. In newer institutions occupational education has had built-in equality or even primacy from the start.

Full partnership increasingly is recognized by efforts to integrate occupational and transfer faculty by equating work experience with academic credit for purposes of meeting teacher qualifications, giving credit for placement on a salary schedule, and providing credit for promotion.

Equal partnership for transfer and occupational education derives support from the growing realization that students and their programs cannot be neatly divided into transfer and occupational compartments. Underlying the transfer program there is as much of an occupational goal, even though it is deferred until senior college, as there is for those specializing in career programs of two years or less. Furthermore, it is virtually a

truism in community colleges that neither occupational education or general education, is often indistinguishable from transfer-oriented education, is as desirable alone as in meaningful combination with one another.

Implications for Facilities

The need for occupational education to be accorded full partnership with other educational programs of the community college may be recognized in facility planning and utilization. Ideally, this would mean that as one approached the college grounds he would not be able immediately to identify the occupational facilities as the older, the lower in elevation, the unit relegated to the rear, of plainer design and construction, or a simulated saw-tooth factory. Full acceptance of the occupational education component needs to be revealed in design, construction, and placement on the site.

Paradoxically it may even be true that facilities for occupational education need highlighting, since such programs are generally less well known to high school students and adults. The new and emerging occupations are unknown to many. Facilities for such programs may help to inform about occupational education or even to advertise their availability. Furthermore, the student who has been "turned-off" by the academic environment of early school experiences may respond to the invitation and openness of attractive, highly visible occupational educational facilities. Thus the "shopping center" or "department store" concept makes the data processing laboratory, the electronics workshop, the dental laboratory, open to outside walkways, with plenty of windows to show what is going on inside.

A comment on the library is in order for it is here that the inequality of occupational education is often unmistakably displayed in the tiny percentage of books and periodicals selected for occupational education courses. Some semblance of equal representation for occupational education may be provided by emphasis on audio visual resource materials, including audio and video tapes, films, filmstrips, and transparencies which are often used in occupational education classroom instruction and, alternatively, can be made available for self-instruction in the library.

Concept Three

Community college occupational education includes a full and broad range of functional areas or clusters which may be conveniently grouped as:

industrial & engineering technology
business, secretarial and data processing programs
health occupations
public and human service
miscellaneous groups, including agriculture, and personal service

Comment

Historically, the community college has emphasized the industrial and engineering technologies, and the business and secretarial programs. The bulk of existing programs are still in these areas. In Illinois, 75% of all occupational programs are here. The newer areas of health occupations along with public and social service are growing, although less rapidly than national need and student interest might require. As long ago as 1960 health occupations were one of the top three national employment fields, with twelve health occupations personnel trained and working for every professional position. Similarly, the area of government employment, the very core of public and human service programs such as law enforcement, child care worker, and teacher aide, is perhaps the fastest growing area of all. These newer fields of "people service", as the community colleges move into them, represent maximum employment opportunities, particularly in large cities. They are simultaneously a source of satisfaction and fulfillment to many young and older adults whose life styles are oriented towards service to other people.

The four or five functional groups, or clusters, or "manpower areas" if one looks at them from the standpoint of the job market, are emerging nationally as natural divisions of community college occupational education. There is a significant implication in this pattern for administrators and for the development of facilities. For one thing, these functional groupings or clusters parallel reasonably well the traditional divisional structure of many institutions of higher education, except that they represent compatible applied aspects of traditional theoretical disciplines. For example:

Divisions:		Functional Groups or Clusters:
physical science	-	industrial and engineering technology
biological science	-	health occupations
behavioral science	-	public and human services
	-	business and secretarial programs

Business and secretarial programs are virtually always applied by their very nature, yet have a traditional position in the academic structure without having to be tied into a theoretical discipline.

Some community colleges have organized their occupational program in such expanded or integrated divisions so that theoretical and applied subjects, transfer and occupational students, regular students in the day and adults in the evening, are combined in one group under one administrative structure unified by a reasonably common subject matter area. Such an arrangement might following Diagram #1 . In such a pattern the functional areas or clusters might be housed separately, each achieving relatively equal status with other functional areas by combining occupational, transfer, and the community service programs in one

CAREER EMPHASIS

FUNCTIONAL LINE-STAFF CHART
COMMUNITY CAREER COLLEGE

DIAGRAM # 1
Integration Pattern

BUSINESS MANAGER

PRESIDENT

1. DEAN *
PLIED PHYS. SCI.
NGINEERING AND
DUSTRIAL.

2. DEAN *
APPLIED BIOLOGICAL SCIENCES: HEALTH SERVICES

3. DEAN *
GENERAL EDUCATION:
COMMUNICATIONS
MATHEMATICS
HUMANITIES
PHYS. ED.
LEARNING RESOURCES

4. DEAN
STUDENT PERSONNEL SERVICES

5. DEAN *
BUSINESS AND OFFICE SERVICES

6. DEAN *
APPLIED BEHAVIORAL SCI.
PUBLIC AND HUMAN SERVICES

INSTRUCTIONAL UNITS (PRIMARILY).

SERVICE UNITS (PRIMARILY).
ALSO FOOD, HEALTH, LIBRARY.

INSTRUCTIONAL UNITS (PRIMARILY)

CURRICULAR DEPTS.
1.- ELECTRONICS
INDUSTRIAL CHEM

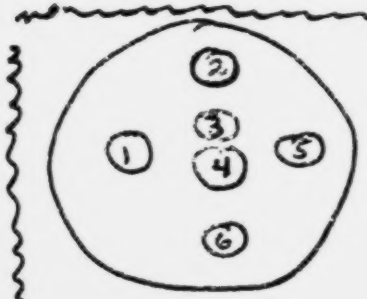
CURRICULAR DEPTS.
EG. NURSING
INHALATION THERAPY.

CURRICULAR DEPTS.
EG. ACCOUNTING
SECRETARIAL

CURRICULAR DEPTS.
EG.
LAW ENFORCE
CHILD DEVELOP

INCLUDE PROGRAMS & COURSES FOR:
- TRANFER
- OCCUPATIONAL
- REMEDIAL
- ADULT & CONTINUING ED.

→ EACH DEAN (EXCEPT #4) HAS ALL OF THESE IN HIS AREA



POSSIBLE FACILITIES ARRANGEMENT

SERVICE CORE: CENTER

INSTRUCTION UNITS: PERIMETER

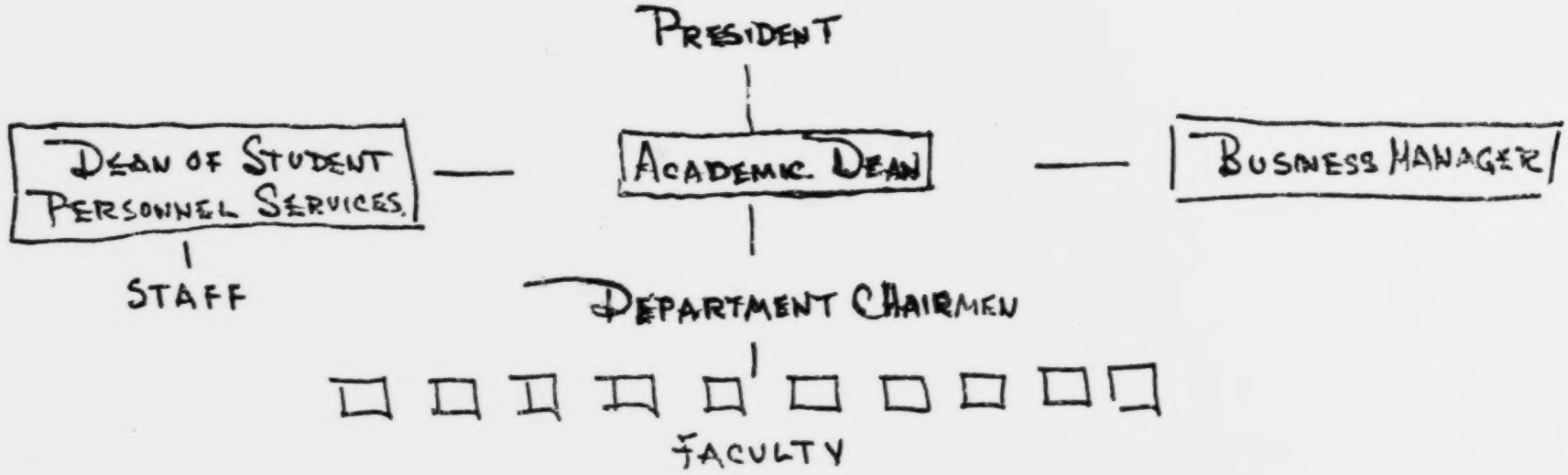
ACADEMIC EMPHASIS
-LITTLE OCCUPATIONAL

TRADITIONAL LINE-STAFF CHART

JUNIOR COLLEGE

DIAGRAM #2

TRADITIONAL PATTERN



SALANCE
½ TRANSFER
½ OCCUP.

DIAGRAM #3
SEGREGATION PATTERN

RECENT LINE-STAFF CHART.
COMPREHENSIVE COMMUNITY COLLEGE

PRESIDENT — BUSINESS MANAGER

1. DEAN OF TRANSFER PROGRAMS
2. DEAN OF OCCUPATIONAL PROGRAMS
3. DEAN OF CONTINUING AND ADULT ED. COMMUNITY SERVICE
4. DEAN OF STUDENT PERSONNEL SERVICES

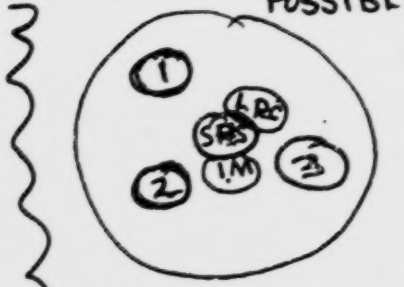
DEPARTMENTS
DISCIPLINE ORIENTED

DEPARTMENTS
INDUST-ENG., HEALTH, BUS. SEC. PUBLIC SERVICE
CURRICULUM ORIENTED

SERVICES

FACULTY | FACULTY | FACULTY | FAC. + STAFF.

POSSIBLE FACILITIES ARRANGEMENT



STUDENT PERSONNEL — FOOD SERVICE, INSTRUCTIONAL MATERIALS, RESOURCES CENTER. } CORE

TRANSFER
OCCUPATIONAL
CONTINUING AND ADULT EDUCATION } PERIMETER

unit with the auxiliary and support areas of communications, humanities, student personnel services, physical education, and learning resources center within easy access.

More conventional administrative structures, as illustrated in diagrams #2 and #3, consolidate all educational programs under the academic dean, or place transfer programs under one head, and occupational programs under a second, with continuing education or community services under the third. In Diagram #3 each component of the educational program might thus have its own subdivisions, such as departments. Sometimes the names of the major groupings are different but the organizational structure is similar. The total educational program, for example, may be divided into arts and sciences on one hand, including the traditional disciplines as departments, while lumping all the occupational programs under applied arts and sciences, with departments following the functional areas or clusters.

Implications for Facilities

Certainly planning for facilities and equipment in the community college of the 1970's must provide for a broad range of programs spanning the four or five major functional areas or clusters delineated above as readily as it provides for the full range of transfer programs. No community college can rest with the traditional technical institute complex of electronics, mechanical technology, and others in the applied physical science area, nor with the traditional secretarial programs and accounting programs. A full range of modern occupational education programs for the community college implies a full range of facilities which may run the gamut from a specialized electronics laboratory or an automotive technology shop to a conventional classroom which really serves quite well for many of the

applied behavioral science programs, such as guidance aide, teacher aide, social service aide, and much of child care aide or even law enforcement. From a facilities and equipment standpoint, many of this latter type might conveniently be billed as "free or inexpensive" occupational programs.

The general arrangement of facilities for occupational programs logically should and sometimes does follow the administrative pattern for organizing and administering such programs.

Thus, the more conservative and more traditional community college "segregation pattern" would separate occupational programs from transfer curricula and community services either in separate buildings or in segregated areas of the same building. Such an arrangement might be represented in Diagram #3.

On the other hand, the "integration pattern" which uses the functional areas or cluster approach might follow an alternative department as illustrated in Diagram #1, which physically separates facilities into clusters with support functions centrally located.

Arrangement of facilities based on administrative and organizational concepts do not necessarily exhaust the possibilities. Concern for the mix of students and/or for economical groupings of instructional facilities by type--e.g., all classrooms in one area, all laboratories in another, is treated in Concept Seven.

Concept Four

Within each of the various functional areas or clusters of occupational education programs at the community college a complete "lattice" structure or network of programs providing for upward and sideward mobility of students places only the limits of motivation and ability on a student's access to any program at any level.

Comment

The "lattice" concept requires a full horizontal range of programs within each functional area. Thus, in the health fields a full "lattice" might include a dozen or so different health specialities, such as registered nursing, radiology, dental hygiene, inhalation therapy, which in some localities might have to be offered entirely by the community college but which in others could be divided among several kinds of institutions.

The breadth of the offerings should be accompnaied by depth, by a vertical dimension. Full two-year associate degree programs in applied science need to be complemented by certificate programs of one year or less, such as licensed practical nurse, inhalation therapy aide, and community health aide.

The typical transfer-oriented program of the community college provides acceptable closure for the student and creditable accomplishment for the institution only after 60+ hours of work and an associate degree. Much of community college occupational education follows in these footsteps with a two year degree usually labeled as science or applied science,

representing the foundation of the occupational education program. Yet the occupational education needs of a heterogeneous student body are so varied, and the job skills required for successful performance are so different, that what is needed are smaller packages of learning experiences in many different combinations or modules with a certificate awarded on completion. Such modules can be combined into larger packages, and even be accumulated in such quantity and character as to constitute a step by step access to the associate degree with the added advantage of "breaking out" successfully and gracefully at several points.

A fully fleshed out "lattice" with both breadth and depth does not stop with the community college. It presupposes effective articulation with the secondary schools on one hand and senior institutions of higher education on the other. Health occupations programs, for example, could be available in a planned multi-dimensional network made up of a broad range of health specialities offered throughout the public and private education hierarchy at low cost and with mutual acceptability of each institution's educational effort. The end objective of such a network would be that any student with requisite motivation and ability can become a physician through traditional channels, educated specifically and directly for that position, or by alternate routes up and across a career lattice which may have intermediate "breakout" points at pharmacy aide, inhalation therapist, radiologist, or physician's assistant.

The lattice structure insures that job preparation not be "dead end". This is particularly significant in these times when minority group sensitivities can spell the difference between an effective program and one

which is doomed from the start. Black students, and black administrators particularly, appear very mobility-conscious and insist that the full spectrum of the career lattice be open, including the professional levels of doctor, lawyer, and engineer, where blacks are currently under represented.

Job preparation needs to provide what is required for job entry at some level but also must leave open the possibility of reaching higher status or responsibility and better pay and positions reasonably well related to the one previously trained for. A nurse aide program, for example, might provide for easy transition to a licensed practical nursing program, which in turn, could articulate with an associate degree program for bedside registered nursing which in turn might permit and encourage a student to move on to a baccalaureate program in nursing in another institution. Always there needs to be the assurance that students would not be required to start back at "ground zero" when attempting to move from point to point within the "lattice". Similarly, an inhalation therapy aide ought to be able to move vertically to an inhalation therapist program or laterally into nursing or radiology with a maximum transferability of education, training, and experience. And all these health occupations, which are really health team positions, need liaison with and accessability to opportunities for professional training as doctors, dentists, and others of the same type.

Implications for Facilities

Planning facilities for the ultimate use of a single program at a single level would appear to have limited utility. On-campus facilities

for an associate degree program in nursing for example, would probably have considerable utility for other kinds of nursing training and for simulated patient care in several allied health fields. Such maximum utilization of facilities may require careful scheduling and other adjustments to continue making a nursing room, for example, available on an open laboratory concept so that nursing students can work on individual projects when the room is not being used for classes.

Similarly, nursing rooms set up for single concept films, self-instructional equipment, and programmed learning are equally adaptable to other health occupation students. With increasing emphasis on individualized learning, as required not only by the heterogeneity of the community college student body, but also by the need for a free flow of students with full recognition of past experience and training moving through positions in the "lattice", much less emphasis on group instruction facilities and much more on individualized learning facilties with full use of educational technology seems to be called for.

There is great advantage, in view of the prevalent "team" approach to medicine, in having all students in health related areas, for example, not only in the same area but in class and laboratory as well as clinical interaction with one another. Perhaps this kind of "mix" wherein students in various occupational categories train together in anticipation that they may later work together is a more practical mix than an unselected one.

Concept Five

The development of a network of occupational education programs which accommodates a full range of student ability, motivation, and mobility brings the community college face to face not only with a wide range of ordinary high school graduate types but with disadvantaged, handicapped, and unemployed. The low level of preparation and low motivation of many of these students may not be adequate for technical and vocational programs as usually developed in community colleges, but may require different kinds of job training including involvement in development of new jobs and job classifications.

Comment

Community colleges today are becoming increasingly involved with programs loosely identified as manpower training programs. Part of this movement has been dictated by the apparent concentration of Vocational Education Act of 1963 funds in conventional vocational and technical programs rather than in special efforts for the disadvantaged. The 1968 Admendments have mandated much more emphasis on the disadvantaged and handicapped and together with Manpower Development Training, New Careers, Model Cities, and Public Service Careers funding, have extended the range of community college occupational education.

Although programs for disadvantaged have been more emphasized in urban centers with high concentrations of minority groups and poverty people, it is also a need for rural and suburban efforts which, to quote Illinois statistics, have approximately 40% of the disadvantaged.

Basically such programs follow the model of skill training often using on-the-job experience in a position created by a cooperating employer and coupled with basic literacy, social and personal skills, counseling, legal aid, consumer education, and sometimes child care service.

Many occupationally oriented programs have emphasized business and industrial skills such as metal trades, welding, drafting, and office skills. More recently, public service type positions such as community health worker, community representative, and community police aide have been developed through city and other governmental agencies working with community colleges.

Implications for Facilities

There are perhaps a few generalizations that apply to all occupational education facilities designed to house programs for the disadvantaged. Commonly such programs minimize outside study but generally the paucity of study facilities at home requires provision for that activity in that facility. Proximity to residences of target groups is commonly an important criterion and parking facilities appear less important than easy access to public transportation. Perhaps a special plea is in order for an attractive architectural style devoid of the industrial type exteriors as an added incentive for students. Interior requirements include flexible space allocations for changing needs. Provisions for basic industrial and business skills equipment need to be coordinated with more sophisticated equipment in the cooperating business and industry. General classroom and particularly communications skill laboratories are needed. Child care facilities make things easier for mothers seeking training and serve as a base for developing child care aides.

Much of the prior discussion assumes that a skill center would be a separate satellite of a community college. Alternatively, skill center facilities are incorporated in community college occupational education buildings on campus so that skill center students blend into the general student body and also have a wider range of learning opportunities.

In any kind of facility the increased concern with handicapped students requires special ramps, rails, and toilet facilities.

Concept Six

Community college occupational education needs not only to bring unemployed, underemployed, and apparent unemployables up to an acceptable level of job preparation, but also must provide part-time training and education for those who seek upgrading or updating on their present job.

Comment

A broad based occupational education program requires facilities open for the full day and evening and even weekends for the entire year. Not only does evening and weekend operation make for flexible offerings available when students have finished work, but evening and weekend programs encourage work experienced part-time faculty drawn from business, industry, and government to teach on a part-time basis.

In our rapidly changing technological society it is perhaps more reasonable to provide specific education on a continuing basis for all persons throughout their lives than to try to provide a broad general education or even broad technical education in advance of some recognized need for it and thus to prepare the individual for all kinds of change. In occupational education, the concept of continuing education, wherein re-training when particular job requirements change drastically, or the individual seeks to move up or across a job lattice, seems to be the more practical approach.

Implications for Facilities

Year-round 14-hour a day operations for commuter students require air conditioning, relatively maintenance-free facilities, vending machine food service, and lounge facilities. Evening operations place particular emphasis on adequate lighting, parking facilities, security provisions, and ready access to rapid public transportation. For evening programs dealing largely with adults, who are probably more anxious about their academic proficiency than younger adults, entry areas should avoid formality and the "institutional look". Friendly, relaxed and inviting foyers and interiors are important to all but especially to older adults.

Concept Seven

In order to match the varied abilities, interests, and learning styles of the heterogeneous student body of the community college flexible instruction methods are needed which provide several paths to reach a predetermined and publicized set of attainable behavioral objectives.

Comment

The retreat from group instructional methods, such as lecture and lecture/discussion, toward more flexible modes encouraging individual learning at an individual pace in an individual style is perhaps not as dramatic in occupational education where learning objectives have ordinarily been fairly precisely determined by rather immediate job requirements. Development of manipulative skills requiring self-instruction through practice and individual progress rates to attain an acceptable skill level have been more the rule than the exception.

Implications for Facilities

Occupational education facilities probably need to embrace more completely the emphasis on individual learning and to provide facilities and equipment designed to promote it. Laboratories or shops with an attached lecture room or with a balcony or portion of the floor area set aside with tablet armchairs so that students can be moved conveniently from shop or lab stations and assembled for a lecture, film, or discussion is probably both outmoded and uneconomical, even though it is a very common pattern in vocational schools. Increasing emphasis on the development of

behavioral objectives attainable through programmed learning, independent study, experiments, and projects probably argues more for providing individualized facilities either in a centralized learning resource center or in extensions of such a center located in shop and laboratory areas. Typing by video tapes, for example, might call for well equipped carrels which a student can enter or leave at any time without disturbing others, and which can be made available for use by other students when a desired skill level is reached, is much more likely the type of needed facility than a typing room with customized desks neatly arranged in rows for group instruction.

The concept of providing alternative routes to learning based on different learning styles of students, and conceivably even different teaching styles of faculty, opens up the question of facilities structured in an activity arrangement. The architectural firm of Perkins and Will at the night center of Rhode Island Junior College, for example, grouped learning spaces to conform to different learning and teaching styles. Thus, the following pattern:

laboratories and shops (action oriented)	seminar-type small classrooms (interaction oriented-discussion)	large group instructional rooms (reaction oriented-lecture)

In theory this approach mixes students with many objectives, so that the transfer-oriented students and occupational education students do not become isolated one from the other, and thus better prepares the individual for the kind of mix he will encounter in the world outside of school.

This "total integration" concept needs to be studied carefully in relation to the "limited integration" concept discussed in Concept Three which would mix occupational education students with different specialties for more specific purposes than the rather diffuse objectives of social growth and improved human relations resulting from a more general mix.

Concept Eight

Increasingly occupational education programs are including some component of work experiences as an integral part of the program. This is true even in older occupational areas, such as secretarial training, where experience in an operating office either on an internship basis after formal training has been completed or integrated into the formal training process. It is particularly true, if not imperative, in the health occupations where clinical experience in an operational setting with real patient care is the usual pattern.

Comment

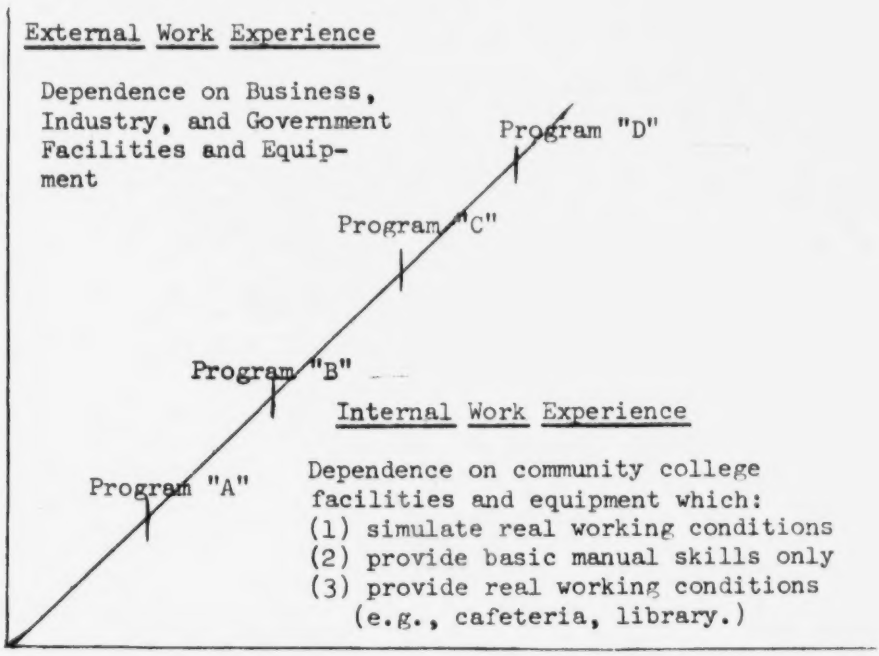
The work experience component provides realism in the program, a feedback from the world of work that keeps formal training up to date with developments in the field and provides a natural motivation for students. Work experience, particularly for disadvantaged students, provides a source of financial support without which large numbers of students would be unable to take available training.

Implications for Facilities

Dependence upon work experience provided in a realistic job setting implies less need for facilities and equipment to replicate on-campus the more advanced and sophisticated kinds of equipment in use commercially. It does not deny the need for basic or general skill training facilities on campus however.

The larger issue raised is whether or not to replicate actual working conditions on campus. The issue could better be posed in terms of a continuum from complete on-campus replication of working conditions on one hand to a complete dependence on facilities provided off the campus by business and industry on the other hand. Diagram #4 illustrates such a continuum.

Diagram #4


External Work Experience
Dependence on Business, Industry, and Government Facilities and Equipment
Program "D"
Program "C"
Program "B"
Internal Work Experience
Program "A"
Dependence on community college facilities and equipment which:
(1) simulate real working conditions
(2) provide basic manual skills only
(3) provide real working conditions (e.g., cafeteria, library.)

The trend however, appears to be away from replication. Grant Venn in Man, Education and Work, commented on the now out-moded implications for facilities embodied in the Smith-Hughes Act of 1917:

> The drafters of the Act made the assumption that the students should be taught in a fully equipped school shop by a professional teacher with practical experience. In a period of comparatively slow technological change, it was valid to assume that the institutionalization of school equipment and teacher experience would present few problems of obsolesence.[1]

Contrast this with Arthur Cohen's view in Dateline '79: Heretical Concepts for The Community College:

> An alternative view holds that vocational education only pretends to educate when it creates a spurious facsimile of a factory within a school building . . . . Instead of creating a miniature world within the walls of the campus why not a subsidized transformation of the industrial plant? Partnerships between schools and industries have already sprung up in many places . . . . are they indicative of a trend that will move technical training out of the college?

The visionary view of Arthur Cohen for the community college of the future finds support in the present in such arrangements as the cooperative Associate Degree program in laboratory technology offered by the Ulster County Community College using the modern and sophisticated clinical laboratory of the City of Kingston, New York. Included is supervision by three professional staff members to provide realistic work experience analyzing fresh specimens from patients in a truly operational setting.[2]

The practical choice for a community college would most likely be some compromise between replication of work situations and dependence on

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1 Venn, Grant. Man, Education and Work, American Council on Education, Washington, D.C., 1964, p. 66.

2 Cohen, Arthur M. Dateline '79: Heretical Concepts for The Community College, Glencoe Press, Beverly Hills, California, 1969, p. 140.

business and industry for all "hand-on" experience. The problem of high costs and rapid obsolence seems to argue for using business and industry facilities and equipment wherever possible. One simple compromise is the use of basic universal equipment or acceptable mock-ups on campus. An outmoded piece of x-ray equipment, for example, can provide basic training and positioning wherein modern hospital equipment is needed for complete training of the radiologist.

It is also important to note that some types of facilities are an integral part of the campus already, and by relatively minor adjustments can be made adaptable for work experience. School cafeterias, with the addition of extra equipment to provide experience with alternative types of food processing hardware, can serve the food preparation and food service program. Similarly, plant maintenance programs may use campus heating plants as part of work experiences. The child care center on campus may not only provide a baby-sitting service for mother-students but also training stations for child care aides. School grounds provide some work experience for ornamental horticulture, and the library and the guidance counseling area offer training stations for aides.

Concept Nine

The occupational education program of the community college needs to be flexible to adapt to the changing characteristics of the student body and the job market. It is a very dynamic component of the educational program and requires constant evaluation, deletion, addition, and modification of programs.

Comment

The new technology is not only characterized by rapid change but by an increase in the rate of change. New jobs appear regularly and obsolesence is commonplace. The rapid rate of change demands that the education system encompass training and education for new jobs constantly and adjust to changes in the economic system affecting job placement.

Implications for Facilities

There appears to be need for very careful study and consideration prior to making a large investment in specialized, sophisticated, and expensive equipment by the college. Particularly in planning initial facilities, maximum physical flexibility to anticipate frequent changes is essential. Furthermore, to commit all available space for specific occupational programs precludes the attractive alternative of developing a number of "sure-fire" programs to start, programs which have both community and national need to support them, and then reserving general space for those programs which appear to develop high promise a little later on.

Provisions for as much open uncommitted space, flexible utility arrangements, emphasis on multi-purpose laboratories and shops--these are the things that seem most consistent with the changing face of occupational education.

The architects have a word for flexibility. It is a "loft" building--analogous to an office building created for a long life of unknown and unpredictable tenants whose specialized needs can be provided for over the years with interior partitions and fittings. The long lag, perhaps two years or more, between decisions by occupational education administrators and faculty as to what programs should go in what space allocations with what equipment may produce substantial change in what is really wanted when construction begins. And if details--space allocations, installations of partitions, placing of equipment--are set too early, expensive change orders result.

Once the program and space allocations are made, hopefully as late as possible, then change must be expected and planned for. Modular building units make for easier expansion, pipe joints with capped T's assist rearrangement of utilities, mobile equipment units and storage facilities encourage flexible groupings. These help to accommodate a basic shell to inevitable change in occupational education programs.

Concept Ten

Effective occupational education programs need readily accessible career information, recruitment, guidance, counseling, and placement services.

Comment

The occupational education function of the community college is perhaps less well known than other programs, not only to the general public but to the present and potential student body. In addition, the range of program possibilities is large and changing and the need for extensive and recent career information is critical. Occupational education students tend to be less oriented toward education, less aggressive in seeking out education programs, and less well motivated to continue education beyond high school. Encouragement of such students requires careful and complete handling with an assurance of closure all the way from the information-giving steps through placement of the student in a satisfying job. For all these reasons, the student personnel services are highly critical for occupational education students.

Implications for Facilities

Some successful occupational education programs exhibit characteristics of a college within a college, of a self-contained operation that to a considerable degree, has its own auxiliary services. Thus occupational education students may have specialized occupational counselors through whom much of the student personnel service is provided, who maintain separate

records, and who logically should be readily accessible physically and psychologically to occupational education students. An open, inviting, walk-through type of occupational counseling center in student-frequented space in or near an occupational education instruction area could be a desirable arrangement. Some community colleges believe a single integrated student personnel services center for the entire community college has the disadvantage of subordinating occupational education counseling to general counseling, and produces less satisfactory results since general counselors do not have the degree of special knowledge required to be effective with occupational students.

More commonly there does appear, however, the pattern of centralization, administratively and physically, of all student personnel services including admissions for all students along with those in occupational education. This approach is not only deemed more economical but is in keeping with the concept of institutional unity. Often however, the occupational education faculty then need to participate heavily in specialized auxiliary services such as developing and making contact with their counterpart high school faculty, giving students specific information on career programs and job opportunities, coordinating work experience, and actively participating in placement. What this seems to indicate is that student personnel services for occupational education students appear to gravitate toward specialization whether it is done formally or informally.

Some degree of decentralization of student personnel services, particularly counseling in a sub-center arrangement, would seem to fit the needs of occupational education best. Occupational education faculty are a kind of "do-it-yourself" breed and if the student personnel services

people are willing to join forces at least to the extent of bringing services to where they are easily accessible to occupational education faculty and students, a happy arrangement will probably result.

Postlude

The community college has undergone historical changes and will probably undergo additional changes as we look to the future. In terms of educational programs, it has evolved from a junior college with a great deal of academic emphasis and with relatively little concern for skill development and occupational programs. At the present point in the evolution of the community college, the model institution is a comprehensive one which in practice encourages occupational education and community service in varying degrees depending on the history, educational philosophy, personnel, and community characteristics.

As we look to the future, however, the present ideal of a community-determined balance between the components of comprehensiveness is probably shifting more to the career orientation. Some see in the not too distant future a community career college evolving from the present comprehensive community college. One hears the term community technical college being discussed. Such an institution might have its total functional organization along career lines or career clusters on the assumption that education is basically career-oriented for all students, whether they be willing to admit to short term goals or whether they identify themselves as college-bound. Some two-year institutions, particularly those that began as technical institutes, and later added liberal arts as service functions to become community college types, are already at that stage.

The reality of the present situation, however, is that community colleges today range themselves along a continuum from pure liberal arts transfer orientation to major career emphasis. Although there are many

contradictions in practice, it would appear that the degree of comprehensiveness embodied in institutional philosophy would mandate the type of administrative structure, and this in turn would strongly influence facilities.

The overriding issue apparently is developing consistency between the degree of comprehensiveness (meaning essentially the breadth and depth of occupational education), the administrative structure, and facilities. This is the logical interrelationship. There is also the psychological interrelationship to be developed in the type of student mix, the equality of status for all components of the educational program, the kind and degree of identity of students with the institution, their program, their faculty and their fellows, and the motivational aspect of the learning environment.

Put another way one might say that facilities can and should reflect the mission of the institution as revealed through its degree of comprehensiveness, and the status accorded each element in the mission, the administrative organization designed to further that mission, and the kinds of behavioral experiences and changes expected of the students.